

DOCUMENT OF THE INTER-AMERICAN DEVELOPMENT BANK

BRAZIL

**STATE OF SÃO PAULO
HIGHWAY INVESTMENT PROGRAM**

(BR-L1373)

LOAN PROPOSAL

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ELECTRONIC LINKS	
REQUIRED	
1. Procurement plan	http://idbdocs.iadb.org/wsdocs/getDocument.aspx?DOCNUM=37932038
2. Annual work plan (AWP)	http://idbdocs.iadb.org/wsdocs/getDocument.aspx?DOCNUM=37936791
3. Monitoring and evaluation arrangements	http://idbdocs.iadb.org/wsdocs/getDocument.aspx?DOCNUM=37939904
4. Environmental and social management report (ESMR)	http://idbdocs.iadb.org/wsdocs/getDocument.aspx?DOCNUM=37944268
OPTIONAL	
1. Maps	http://idbdocs.iadb.org/wsdocs/getDocument.aspx?DOCNUM=37953555
2. Economic assessment	http://idbdocs.iadb.org/wsdocs/getDocument.aspx?DOCNUM=37932069
3. Technical report	http://idbdocs.iadb.org/wsdocs/getDocument.aspx?DOCNUM=37931989
4. Institutional analysis (ICAS)	http://idbdocs.iadb.org/wsdocs/getDocument.aspx?DOCNUM=37932009
5. Logistics and integration report	http://idbdocs.iadb.org/wsdocs/getDocument.aspx?DOCNUM=37936793
6. General procurement notice	http://idbdocs.iadb.org/wsdocs/getDocument.aspx?DOCNUM=37932053
7. Environmental and social analysis	http://idbdocs.iadb.org/wsdocs/getDocument.aspx?DOCNUM=37944259
8. Transportation Development Master Plan (PDDT)	http://idbdocs.iadb.org/wsdocs/getDocument.aspx?DOCNUM=37936807
9. Terms of reference of the Logistics and Transportation Master Plan (PDLT)	http://idbdocs.iadb.org/wsdocs/getDocument.aspx?DOCNUM=37952476
10. Financial capacity analysis of the State of São Paulo	http://idbdocs.iadb.org/wsdocs/getDocument.aspx?DOCNUM=37948382
11. Cost study	http://idbdocs.iadb.org/wsdocs/getDocument.aspx?DOCNUM=37948398
12. Project completion report, loans 1351/OC-BR and 1735/OC-BR	http://idbdocs.iadb.org/wsdocs/getDocument.aspx?DOCNUM=1074057 http://idbdocs.iadb.org/wsdocs/getDocument.aspx?DOCNUM=35742558

ELECTRONIC LINKS

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|---|
| 13. Safeguard policy filter and safeguard screening form
http://idbdocs.iadb.org/wsdocs/getDocument.aspx?DOCNUM=37953495 |
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ABBREVIATIONS

AWP	Annual work plan
CAF	Andean Development Corporation
CBE	Coordenadoria de Meio Ambiente [Environment Coordination Unit]
CETESB	Companhia de Tecnologia de Saneamento Ambiental [Environmental Sanitation Technology Company]
COFIEEX	Comissão de Financiamentos Externos [External Financing Commission]
DER/SP	State of São Paulo Highway Department
ESA	Environmental and social analysis
ESMR	Environmental and social management report
ESMS	Environmental and social management system
ESP	Environmental supervision plan
ETA	Especificações técnicas ambientais [Environmental technical specifications]
HDM-4	Highway Development and Management Model
HRP	State of São Paulo Highway Rehabilitation Program
IBGE	Instituto Brasileiro de Geografia e Estatística [Brazilian Institute of Geography and Statistics]
IBRD	International Bank for Reconstruction and Development
LI	Licença de instalação [setup permit]
PDDT	Plano Diretor de Desenvolvimento de Transportes [Transportation Development Master Plan]
PDLT	Plano Diretor de Logística e Transportes [Logistics and Transportation Master Plan]
PRAPC	Programa de Redução de Acidentes em Pontos Críticos [Program to Reduce Accidents at Critical Points]
SEADE	Fundação Sistema Estadual de Análise de Dados [State Data Analysis System Foundation]
SIAFEM	Sistema Integrado de Administração Financeira para Estados e Municípios [Integrated Financial Management System for the States and Municípios]
SLT	State of São Paulo Logistics and Transportation Department
SMA	Secretaria do Meio Ambiente [Department of the Environment]
SP	State of São Paulo
TCE/SP	Tribunal de Contas do Estado de São Paulo [State of São Paulo Audit Office]
UBAs	Unidades básicas de atenção [basic service units]
UCPR	Unidade de Coordenação de Programas Rodoviários [Highway Programs Coordination Unit]
WAL	Weighted average life

PROJECT SUMMARY

BRAZIL STATE OF SÃO PAULO HIGHWAY INVESTMENT PROGRAM (BR-L1373)

Financial Terms and Conditions			
Borrower: State of São Paulo Guarantor: Federative Republic of Brazil Executing agency: State of São Paulo Highway Department (DER/SP)		Flexible Financing Facility*	
		Amortization period:	25 years
		Original WAL:	15.25 years
		Disbursement period:	5 years
		Grace period:	5.5 years
Source	Amount	Inspection and supervision fee:	**
IDB (Ordinary Capital)	US\$480,135,000	Interest rate:	LIBOR-based
Local contribution	US\$206,015,000	Credit fee:	**
Total	US\$686,150,000	Currency of approval:	U.S. dollars from OC
Program at a Glance			
Objective: The program's general objective is to improve the road component of the multimodal freight and passenger transportation system, in order to enhance competitiveness and regional and international integration. The purpose is to reduce logistics costs, particularly transportation costs and travel times, and to improve road safety conditions through rehabilitation, construction of third lanes, and other improvements on priority highways connecting urban and production centers with the main transportation arteries, whether road, rail, waterway, or pipeline.			
Special condition precedent to the first disbursement. As a special condition precedent to the first disbursement, the State of São Paulo and its Highway Department (DER/SP) will sign a legal instrument governing program execution, establishing the conditions for transfer and use of the loan proceeds, which must be previously approved by the Bank (see paragraph 3.1).			
Special execution conditions. (i) The borrower will provide evidence that the management firm has been contracted no later than six months after contract signature (see paragraph 3.2); and (ii) prior to the start of each work, the borrower will: (a) contract the works supervision service on the terms previously agreed upon with the Bank; (b) provide evidence that (1) the segment to be worked on by the contractor has the corresponding setup permit (LI) or waiver, and any other applicable permits; and (2) a specific resettlement plan has been developed in accordance with Operational Policy OP-710 for works that so require (see paragraph 2.10).			
Special clause. The deadline for the physical start of works will be three years, running from the loan contract signature date (see paragraph 3.4).			
Exceptions to Bank policies: None.			
Project consistent with country strategy:		Yes <input checked="" type="checkbox"/> [X]	No <input type="checkbox"/> []
Project qualifies as:		SEQ <input type="checkbox"/> []	PTI <input type="checkbox"/> [] Sector <input type="checkbox"/> [] Geographic <input type="checkbox"/> [] Headcount <input type="checkbox"/> []

* Under the Flexible Financing Facility (document FN-655-1), the borrower has the option of requesting changes to the amortization schedule, as well as currency and interest rate conversions, subject in all cases to the final amortization date and the original weighted average life (WAL). The Bank will take market conditions as well as operational and risk management considerations into account when reviewing such requests.

** The credit fee and inspection and supervision fee will be established periodically by the Board of Executive Directors as part of its review of the Bank's lending charges, in accordance with the applicable provisions of the Bank's policy on lending rate methodology for Ordinary Capital loans.

I. DESCRIPTION AND RESULTS MONITORING

A. Background, problem to be addressed, and rationale

- 1.1 **The State of São Paulo.** Occupying just 248,000 square kilometers (3% of Brazil's territory) the State of São Paulo (SP) is nevertheless home to almost one quarter of the country's population (41 million) and generates one third of its GDP.¹ Although population is heavily concentrated around the São Paulo Metropolitan Region,² other urban centers throughout the rest of the state give it a reasonable regional distribution. The state's ports and airports (including the Port of Santos, which is the country's largest container terminal) move SP's own imports and exports as well as those of other states. Just 85% of export cargoes originate in SP territory, with the rest mainly export cargoes from other states (Santos is the main grain exporting port in Brazil's Center-West region);³ and 15% of its imports originate in other states.⁴
- 1.2 **The SP modal matrix is highly concentrated in highway transportation.** Nearly 84% of tonnage-km transported goes by road, with rail accounting for just 11%. Other transportation modes, such as the Tieté-Paraná waterway and pipelines, today account for scarcely more than 3%, despite major efforts being made to increase their share in total flows.⁵
- 1.3 **Highway system.**⁶ The State of São Paulo has an extensive network of nearly 200,000 km of roads, some 36,000 km of which are paved, and 5,000 km are divided highways. The spoke highways linking the state's outlying areas to its capital are of the highest standard, particularly those that are divided highways. In addition, paved arterial highways, bypasses, access roads, and connectors⁷ link to the outlying areas of the state. Rounding out the system is a very extensive capillary network, mostly unpaved. Some 6,500 km of the top-level roads (including over 80% of the divided highways) are operated and maintained under concessions, which have attained a very

Table 1. State of São Paulo Highway System

Type of highway	Jurisdiction			Total
	Municipal	State	Federal	
Dirt	161,460	1,176	0	162,636
Paved	14,363	20,919	1,056	36,338
Undivided highway	14,363	13,867	425	28,655
Divided highway	0	4,618	631	5,249
Accessory roads	0	2,434	0	2,434
Total	175,823	22,095	1,056	198,974

¹ Brazilian Institute of Geography and Statistics (IBGE), 2011.

² An area of 8,000 square kilometers is home to nearly 20 million inhabitants and produces almost 60% of the state's GDP.

³ Logistics and integration report at [optional electronic link 5](#).

⁴ Technical annex, [optional electronic link 3](#).

⁵ Technical annex, [optional electronic link 3](#).

⁶ Technical annex, [optional electronic link 3](#).

⁷ *Classificação e Codificação Rodovias Estaduais, São Paulo 2005*, [Classification and Coding of State Roads, São Paulo 2005], DER.

high level of service.⁸ The paved road network is mainly under state jurisdiction (federal jurisdiction only covers 1,000 km, almost all operated and maintained under concession contracts).⁹ The capillary network is mainly under municipal jurisdiction, and the municípios receive technical and economic support from the State for its maintenance.

Figure 1. State of São Paulo Highway Network, by Jurisdiction



- 1.4 The network of paved roads under the jurisdiction of the State of São Paulo is used intensively: 75% carries more than 2,000 vehicles per day, and over 30% carries more than 4,000 vehicles per day. The spoke highways also have unusually high levels of traffic, with over 10% of the network carrying more than 10,000 vehicles per day.¹⁰ In all cases, trucks account for a large share of this traffic (27% on average, and as high as 45% on some highways),¹¹ reflecting SP's importance to the Brazilian economy.
- 1.5 **Institutional structure.** The State of São Paulo Logistics and Transportation Department (SLT), which is the public authority responsible for transportation

⁸ Highways operated under concession in SP are the best evaluated in the annual study conducted by the National Transportation Confederation.

⁹ Of the 65,000 km of roads under federal jurisdiction in Brazil, just 1,000 km (15%) are in SP. Currently, the largest proportion of federal resources contributed to SP is targeted to strategic investments such as the Mário Covas Beltway and Tieté-Paraná Waterway upgrade (Growth Acceleration Program).

¹⁰ Technical annex, [optional electronic link 3](#).

¹¹ Technical annex, [optional electronic link 3](#).

infrastructure, divides responsibility for the construction, maintenance, expansion, and management of the roads under its jurisdiction between: (i) Desenvolvimento Rodoviário S.A. (DERSA), a firm of mixed public-private ownership responsible for building and maintaining strategic roads turned over to the private sector under concession contracts; and (ii) the State of São Paulo Highway Department (DER/SP), an autonomous authority responsible for managing the state highway system and its integration with municipal and federal highways and interface with other modes of transportation, as well as serving the needs of freight and passenger transportation users. The concessioned federal highways are the responsibility of the National Transportation Infrastructure Department (DNIT), whereas municipal and local roads are the responsibility of the respective municípios.

- 1.6 **Road maintenance.**¹² The DER/SP plans and implements routine maintenance activities on a decentralized basis in 14 conservation zones, known as residências de conservação, covering the entire state. Since the middle of last decade, routine conservation has been contracted out to private firms (currently 57 contracts) for work involving the maintenance of paved surfaces, drainage, signs and markings, and plant cover, under the direction of several regional directorates. The budget allocated to road conservation activities has grown over time, both in amount (US\$200 million equivalent in 2011) and in length of the network covered (about 14,000 km that same year). This effort has made it possible to extend the life of road surfaces as far as their design and existing traffic permit. Nonetheless, much of the network is at an advanced stage of deterioration¹³ (nearly 20% of the state system has road surfaces rated poor or extremely poor,¹⁴ and the fact that routine maintenance activities are becoming economically inefficient indicates the need for surface rehabilitation or reconstruction.
- 1.7 **Road safety.** Since 1999 the DER/SP has been implementing the Program to Reduce Accidents at Critical Points (PRAPC). The PRAPC identifies the main accident black spots on the road network, and prepares and implements projects for pavement markings and road signs and alterations to the geometry of the highways and intersections. Thus far, solutions have been proposed for the top-500 critical points in a network of 15,600 km of São Paulo state highways. From PRAPC launch to 2012, the number of accidents and fatalities relative to the number of vehicles had been reduced by one third¹⁵ (from 409 accidents to 146 and from 17 deaths to 6 per 100,000 vehicles). Nonetheless the overall figures remain very worrying because the number of vehicles on the road is growing very rapidly and

¹² Highway conservation activities are divided into routine and large-scale conservation. The latter includes the total or partial rehabilitation of road surfaces and is regarded more as investment activities than maintenance. Routine conservation in SP distinguishes routine activities per se from so-called special maintenance, which includes small-scale work not done during the large-scale conservation.

¹³ Although the network is properly maintained, road surface deterioration is the result of use and the time passed since the previous road surfacing.

¹⁴ Technical annex, [optional electronic link 3](#).

¹⁵ Source: DER/SP Planning Department.

the number of accidents is increasing in absolute terms. In the last five years (2008-2012), the number of accidents relative to the number of vehicles on SP roads fell 25%, but the number of vehicles rose 40% in the same period.¹⁶ Despite the improvements achieved by the PRAPC, the frequency of highway accidents remains a problem of prime importance; an estimate of just the economic value of human lives lost during one year in traffic accidents on the state's road system would be not be less than US\$200 million.¹⁷ Moreover, an estimated 40% of the accidents occurring on the SP road network involve collisions between moving vehicles (25% of accidents are rear-end or head-on collisions), for which the risk of occurrence is directly related to the safety conditions provided by the infrastructure.¹⁸

- 1.8 **Operation of the road system.** To operate the road system, the DER/SP has created basic service units (UBAs) covering each of the road conservation territorial units. These both provide services to users en route and resolve situations with the potential to obstruct traffic flows. Moreover, multiple technological applications make it possible to monitor the traffic situation, providing measures for managing congestion and communicating with users in real time, enabling them to take alternative action. The DER/SP also operates an excess weight inspection system for freight vehicles, to help extend the durability of road surfaces.
- 1.9 **The State of São Paulo's transportation strategy.** The 2005 Transportation Development Master Plan (PDDT), sets out an explicit vision and strategy for the SP transportation system outside the Metropolitan Area of São Paulo. With the aims of promoting quality services and sustainable development and enhancing regional competitiveness, the PDDT contains proposals for implementing infrastructure, together with management and pricing policy measures. Interventions are proposed for roads, railways, inland waterways, pipelines, coastal shipping, and ports, especially those promoting use of the most efficient and sustainable modes of transportation.^{19 20}

¹⁶ Estimates made by the authors using data from Dinatran traffic statistics, SP Planning Department.

¹⁷ *Costs of road injuries in Latin America. IDB costing study: final project report*, Johns Hopkins International Injury Research Unit, Department of International Health. Johns Hopkins Bloomberg School of Public Health. This study suggests as an approximation of the annual loss to the economy of a traffic accident death as between one and three times per capita GDP.

¹⁸ *Federal Highway Administration, Mitigation strategies for design exceptions*, July 2007.

¹⁹ PDDT-VIVO 2005.

²⁰ The SLT of the State of São Paulo is conducting a planning review, which will be contained in the 2030 Logistics and Transportation Master Plan (PDLT). The PDLT stresses aspects already central to the current plan, such as the need for improved intermodality and the logistics vision, and proposes to include economic agents from the outset of the planning process, to make sure their expectations are met without detriment to meeting the public objectives set by the government. The new plan seeks to enhance the logistical efficiency of supply chains by proposing solutions that correctly value environmental and congestion factors. It also seeks to address problems such as prevention of the effects of natural disasters, human resource training, and institution-strengthening.

- 1.10 **The strategy in the road sector.** In terms of road infrastructure, the PDDT emphasizes: (i) the need to restore the existing network; (ii) capacity expansion where traffic growth is causing saturation; and (iii) upgrading of the neighborhood road network to provide greater capillarity to the main network. The interventions proposed are guided by economic efficiency criteria and also take special account of their impact on road safety. Lastly, but no less importantly, the aim is to ensure that both the decision on intervention and its characteristics provide for future connections with other modes of transportation (particularly waterway and rail), to promote the development of these other modes, when efficient to do so.
- 1.11 **State of São Paulo Highway Rehabilitation Program and its financing.** The road sector strategy (see paragraph 1.10) translated into the DER/SP investment plan, the main component of which is the State of São Paulo Highway Rehabilitation Program (HRP).²¹ This consists of a series of interventions including: reconstruction of existing highways, addition of third lanes, dividing highways with the heaviest traffic, construction or rehabilitation of paved hard shoulders, remodeling of the geometry of onramps/offramps at the same level or grade separated, rehabilitation or expansion of concrete or masonry structures, addition of bicycle lanes, improvements in signs and markings, and paving of sections of dirt roads. The actions in the HRP were prioritized on the following criteria: (i) traffic volumes; (ii) condition of road surfaces; (iii) accident rate; and (iv) regional development.²² The HRP is expected to be financed with SP resources and funding secured from other banking sources, mainly multilaterals. In addition to the financing requested from the IDB, loans have recently been obtained from the Andean Development Corporation (CAF) and the International Bank for Reconstruction and development (IBRD).²³

Table 2. HRP Financing

Source	km	Amount (US\$ millions)
IDB program (including local counterpart)	1,868	2,059 (1,440 IDB loan and 618 local counterpart (see paragraph 1.12))
Other banking sources and multilaterals (including local counterpart)	1,100	2,058
State of São Paulo Treasury	4,123	3,393
Total	7,091	7,510

- 1.12 **State of São Paulo Highway Investment Program.** The External Financing Commission (COFIEX) authorized the State of São Paulo to begin preparation of

²¹ Also includes the program for the restoration of eroded areas, embankments, and drainage on SP roads, as well as the PRACP and the radar program.

²² Application of these criteria leads to efficient decision-making. Nonetheless, there is an opportunity to improve the investment prioritization process by systemizing processes and applying information technologies.

²³ IBRD loan for US\$300 million and CAF loan for US\$200 million, approved in 2013.

the loan with the Bank for up to US\$1.44 billion. To comply with the limits set in the Bank's programming with Brazil and the allocation of available funds, COFIEX specified that the financing would be provided through three operations of the same amount.²⁴ This operation is the first of these three, for an amount of US\$480,135,000, which, together with the local counterpart of US\$206,015,000, makes a program total of US\$686,150,000.²⁵

- 1.13 **The Bank's work in the SP transportation sector.** The Bank has supported the Government of the State of São Paulo in financing investments to implement the PDDT, with three loans executed by the DER/SP, two of them for the rehabilitation of state highways (loans 1351/OC-BR and 1735/OC-BR) and the other for the rehabilitation of local roads (loan 2077/OC-BR), as well major participation in financing the works leading to completion of the Mário Covas Beltway (loan 2618/OC-BR).²⁶ The operations for the rehabilitation of state highways and local roads were executed successfully, exceeding the expected outcomes and concluding in less time than agreed.²⁷
- 1.14 **Program rationale.** The State of São Paulo is one of the largest human and economic concentrations in Latin America and one of the most dynamic engines of Brazil's development. As such, it faces the ongoing challenge of preventing logistics and transportation costs from undermining the benefits of agglomeration economies that are among the key foundations of its economic status. A keystone of its strategy is to exploit the synergies between transportation modes and rebalance the modal matrix, while recognizing also that the functioning of the state's economy relies on the highway system. Rehabilitation and upgrading of the system of highways, particularly those contributing to connectivity with other transportation modes, with designs and works execution paying special attention to reducing accident frequency, are the foundations of the HRP being proposed for partial financing.
- 1.15 The highways to be targeted by this program are in one or more of the following conditions:²⁸ (i) significant deterioration of the road surface (over 65% in fair to poor functional condition, and about 40% of their length in the same condition); (ii) inadequate standard for the currently high traffic levels (these are undivided highways, 50% of which carry over 4,000 vehicles per day);²⁹ and (iii) road safety

²⁴ Each of the operations will finance a group of works that are not necessarily interrelated (the outputs and outcomes of each one are defined independently); similarly, the operations are independent of financing from other multilaterals.

²⁵ The two remaining operations are subject to their inclusion in the Bank's programming of operations with Brazil.

²⁶ The analysis of lessons learned can be found in the Technical annex, [optional electronic link 3](#).

²⁷ See project completion reports at [optional electronic link 12](#).

²⁸ See Technical annex, [optional electronic link 3](#).

²⁹ With over 3,600 vehicles per day, an increase on the capacity of the roads is recommended (third lanes, road widening, and upgrading of intersections). "Two-lane highways." Chapter 12 in *Highway capacity manual*. Transportation Research Board, 2000.

conditions that could be improved (with paved shoulders or third lanes, for example). For these reasons, interventions guided by economic efficiency criteria are proposed that aim to: (i) reduce transportation operating costs and freight and passenger travel times; and (ii) establish better safety conditions consistent with current and forecasted traffic levels.

- 1.16 **Road safety.** Improving road safety conditions in the targeted network is at the heart of the program. To ensure that this objective is met, support will be provided for specialized road safety treatment at the engineering design stage, including geometric design, paving, and signs and markings. The engineering designs commissioned by the DER/SP will be reviewed by a road safety specialist and undergo an external road safety audit.³⁰
- 1.17 **Logistics and integration.** The roads to be rehabilitated with the Bank loan proceeds form part of corridors that connect territory within the state to intermodal terminals, both rail and waterway. Improving these highways will make these transportation modes easier to access and economically more attractive to use, thereby contributing to the objective of diversifying the transportation modal matrix set in both the PDDT and the 2030 Logistics and Transportation Master Plan (PDLT) (see paragraph 1.10). Moreover, as the rail and waterway modes carry freight that is almost exclusively for export, upgrading the road network that connects these transportation modes to the state hinterland is expected to contribute to SP's functional integration with the rest of the world.³¹

³⁰ The sample projects will be reviewed by the DER/SP specialist; the rest of the program's projects will also be subject to external road safety audits. A road safety audit is a formal review of an existing or future road or traffic project or any project that has an influence on a road, in which a group of qualified professionals reports on the potential accident risk and safety behavior of the project (*Austroads Inc. road safety audits*, second edition, 2012).

³¹ See Logistics and Integration Report, [optional electronic link 5](#).

Figure 2. Roads Proposed for IDB Financing and their Linkage to Rail and Waterway Modes



- 1.18 **Relation to the Bank's country strategy.** This program is consistent with the Bank's country strategy with Brazil 2012-2014 (document GN-2662-1) and is aligned with the strategic objectives to improve the condition of the country's infrastructure and to improve the institutional capacity of public entities. The operation is also aligned to the Bank's strategic institutional priorities set in the Report on the Ninth General Increase in the Resources of the Inter-American Development Bank (document AB-2764): (b) infrastructure for competitiveness and social welfare; and (d) competitive regional and global international integration. The program also fits into the Bank's Logistics Strategy (INE/TSP), particularly in relation to the subcomponents to promote the development of basic infrastructure and institution-strengthening.

B. Objectives, components, and costs

- 1.19 **Objectives.** The program's general objective is to improve the road component of the multimodal freight and passenger transportation system, in order to enhance competitiveness and regional and international integration. The purpose is to reduce logistics costs, particularly transportation costs and travel times, and to improve road safety conditions through rehabilitation, construction of third lanes, and other improvements on priority highways connecting urban and production centers with the main transportation arteries, whether road, rail, waterway, or pipeline.
- 1.20 **Component 1. Engineering and administration (US\$17.7 million).** This component will finance the following subcomponents: (i) studies and projects, including the preparation of technical, economic, and socioenvironmental studies, as well as the preparation of engineering designs necessary to implement the program works; (ii) administration, evaluation, and monitoring, including activities

to support and manage program implementation, required for its successful conduct and execution; as well as technical, operational, environmental, social evaluation and monitoring activities; and (iii) financial auditing, including the engagement of independent external financial audits.

- 1.21 **Component 2. Works and works supervision (US\$663.9 million).** This component will finance rehabilitation and capacity expansion on 800 km of highways with one or more of the following interventions: reconstruction of existing highways, addition of third lanes, construction or rehabilitation of paved hard shoulders, addition or remodeling of the geometry of onramps/offramps at the same level or grade separated, rehabilitation or expansion of concrete or masonry structures, addition of bicycle lanes, and implementation of signs and markings.
- 1.22 The program is expected to target 16 highway segments forming part of the State of São Paulo's HRP (see paragraph 0). This component will finance the execution and supervision of works, to be contracted to private firms, as well as socioenvironmental mitigation measures. It will also finance external audits of road safety at the project level.
- 1.23 **Representative sample.** As part of the preparation of this operation, the DER/SP identified sample projects, for which economic feasibility studies, final engineering designs, and socioenvironmental analyses were developed. The sample represents 20% of the program's value.³²
- 1.24 **Eligibility criteria.** As this is a multiple-works program, to be eligible, each segment to be included in Component 2 must: (i) be a rehabilitation work, belong to the State of São Paulo road system, and connect at some point with roads of equal or higher technical standard or other modes of transportation; (ii) have economic viability studies and an economic internal rate of return of at least 12%; (iii) have detailed engineering studies, including road safety factors; and (iv) have a completed environmental analysis consistent with the work to be executed, in compliance with the Bank's environment and social safeguards and policies, environmental control plans, resettlement plans (if required), and a setup permit (LI) as provided by legislation in force.
- 1.25 **Component 3. Institution-strengthening (US\$4.5 million).** This component will finance: (i) the development of an investment prioritization system for efficient allocation of resources for the highway system among actions to expand capacity, to reconstruct/rehabilitate road surfaces, or exclusively to improve safety, consistent with the routine maintenance policies developed by the DER/SP; and (ii) capacity building in the DER/SP internal audit area, so as better implement the DER/SP's internal oversight procedures.

³² The sample included the set of works that had been prioritized by the DER/SP, and so had already completed the studies and documentation needed for immediate competitive bidding. The works included in the program are homogeneous in their features, so a sample equivalent 20% of the total value is considered to adequately represent the universe of interventions.

- 1.26 **Costs and financing.** The total cost of the program will be US\$686,150,000, financed with US\$480,135,000 from the Bank's Ordinary Capital and US\$206,015,000 in local counterpart funding. The program will have a five-year execution period.

Table 3. Program Costs and Financing

Component	Cost (US\$)		
	Total	IDB	Local
1. Engineering and administration	17,742,900	14,618,610	3,124,290
1.1 Studies and designs	1,500,000	0	1,500,000
1.2 Administration, evaluation, and monitoring	15,942,900	14,348,610	1,594,290
1.3 Financial audit	300,000	270,000	30,000
2. Works and works supervision	663,907,100	461,466,390	202,440,710
2.1 Highway rehabilitation	631,902,100	433,021,890	198,880,210
2.2 Works supervision	31,405,000	28,244,500	3,160,500
2.3 Road safety audits	200,000	200,000	0
2.4 Socioenvironmental impact mitigation	400,000	0	400,000
3. Institution-strengthening	4,500,000	4,050,000	450,000
Total	686,150,000	480,135,000	206,015,000

- 1.27 Program costs could exceed projections, if the domestic and foreign prices or the market conditions for contracting are materially more adverse than in the past. Stochastic methods were used to estimate the probability of cost overruns, assuming that macroeconomic variables are as volatile in the future as they have been over the last 10 years.³³ The estimated probability of no cost overruns occurring is higher than 50%, and there is an 80% probability that any cost overruns that do occur will not exceed 20% of the program value. The State of São Paulo will be responsible for these higher costs should they occur, and its financial capacity to absorb them has been verified.³⁴

C. Key results indicators

- 1.28 The principal outcomes of the program relate to: (i) reduction in vehicle operating costs on the partially rehabilitated corridors; (ii) reduction in travel times; and (iii) reduction in accident frequency on the highways targeted by the program.

II. FINANCING STRUCTURE AND MAIN RISKS

A. Financing instruments

- 2.1 The Bank financing for this operation will take the form of a multiple-works program loan.

³³ In the context of this program, cost overruns mean the financial resources, stated in dollars, necessary to achieve the specified physical objective, over and above the projected amounts.

³⁴ The contracting mechanisms used by the DER/SP minimize the risks of higher costs than those estimated in the final designs; the analysis performed identifies exchange rate uncertainty as the main source of potential cost overruns (see Cost report, [optional electronic link 10](#)).

B. Fiduciary risk

- 2.2 The Institutional Capacity Assessment System (ICAS) yielded the following results: (i) development level: satisfactory; and (ii) risk level: low. The DER/SP possesses sufficient capacity to implement the program. The analysis of institutional capacity found internal audit weaknesses, and program resources will be earmarked for specific training activities in this area.

C. Environmental and social safeguard risks

- 2.3 The program was classified as category “B” under the Bank’s Environment and Safeguards Compliance Policy (Operational Policy OP-7610). Accordingly, the following activities were included during preparation of the operation: (i) an environmental and social analysis of the entire representative sample of the program, including an environmental audit of implementation of the Highway Rehabilitation Program in the State of São Paulo (Phase II) (loan 1735/OC-BR); and (ii) and an environmental and social management report (ESMR). The DER/SP has held public hearings in the town halls of the main cities served by the road segments included in the program’s representative sample.
- 2.4 Based on the studies done for the sample projects, the road surface rehabilitation works are not expected to generate significant adverse impacts because the physical works will be of small-to-medium scale, conventional from the engineering standpoint, and executed within the existing right-of-way. For those segments, no affected properties were identified, since there is no need for expropriation or removal of low-income populations, nor were any environmentally sensitive or indigenous areas affected. The adverse impacts will occur mainly during works execution, associated with earth-moving, operation of worker camps and asphalt plants, removal of vegetation at isolated points, and a potential increase in the number of traffic accidents. These impacts can be mitigated with an effective environmental management system.
- 2.5 As part of the DER/SP institution-strengthening conducted in earlier programs, an environmental management system (EMS) has been developed for application in all phases of the projects. The DER/SP has a set of technical standards and specifications on environmental issues, which can be used for the program’s environmental management to incorporate practices already instituted. To prevent and mitigate potential adverse socioenvironmental impacts, the DER/SP will use its EMS together with the environmental and social management system (ESMS) prepared specifically for the program.
- 2.6 Given the nature of the actions envisaged for the program, regularization of the projects in accordance with environmental legislation will be guided mainly by the provisions of Department of the Environment (SMA) Resolution 81/98 which creates a waiver from environmental permitting requirements for actions to maintain and upgrade highways, when confined to their respective rights-of-way, that do not involve the suppression of primary or secondary plant cover, and/or

relocation of population. As a result, all of the projects in the representative sample were exempted from permitting requirements.

- 2.7 The exploitation of support areas such as borrow pits, disposal of materials, and rock beds that may potentially alter the environment and can cause the suppression of vegetation or trigger erosion and sedimentation processes, etc. are subject to the environmental permitting. Work support area facilities considered potentially polluting, including the work sites and industrial plants (factories), will require: (i) setup permits issued by Companhia de Tecnologia de Saneamento Ambiental [Environmental Sanitation Technology Company] (CETESB), based on the facility blueprint and measures for the control of water, soil, and air pollution; and (ii) adherence to the directives of SMA Resolution 30/00 for the cadastre of support areas located in areas without environmental restrictions. In the case of rock and gravel beds, the contractors must prepare exploitation and remediation plans for technical review by CETESB and obtain the necessary mining rights decree from the National Department of Mineral Production (DNPM) and required permit. For the exploitation of borrow pits and the use of areas for disposal of surplus materials, the contractor will prepare implementation and environmental remediation plans for those areas, pursuant to the guidelines contained in SMA Resolution 30/00, for submission to the municipal office of CETESB.
- 2.8 Environment-related activities at the DER/SP are tied to project advisory services and performed by the Environment Coordination Unit (CBE). Specific environmental oversight plans, containing specific environmental control solutions for each works activity that has potential to generate an adverse environmental impact, will be detailed by the contracting firms in the works planning phase and submitted to the CBE/DER/SP for approval prior to the award of each works contract. In addition, the DER/SP has procedures, instructions, and environmental technical specifications (ETAs) that will also need to be followed in works execution, so the environmental and social analysis and ETAs will form part of the bidding documents for the works. Each bidder must also include a signed environmental and social commitment in its technical and cost proposal, assuming responsibility for strict compliance with the socioenvironmental measures specified in the aforementioned documents, if awarded the contract. Lastly, both the contractor and works supervision firm must have environmental technical specialists on their respective teams.
- 2.9 The management firm will set up a multidisciplinary environmental supervision team to oversee the contractor in relation to the socioenvironmental impacts arising from the program interventions. This environmental supervision team, in coordination with the CBE/DER/SP, will prepare the environmental supervision plan (ESP) containing the strategy to be adopted and the planning of supervision activities. The ESP will include the environmental supervision strategy: frequency of visits, field logistics, procedures and criteria for recording environmental events, procedures and listing of those responsible for reporting environmental noncompliance and environmental notifications.

- 2.10 The program must satisfy the following special execution conditions: prior to the start of each work, the borrower will: (i) contract the works supervision service on the terms previously agreed upon with the Bank; (ii) provide evidence that (a) the segment to be worked on by the contractor has the corresponding setup permit (LI) or waiver, and any other applicable permits; and (b) a specific resettlement plan has been developed in accordance with Operational Policy OP-710 for works that so require.

D. Special issues and risks

- 2.11 **Analysis of the state's financial capacity.** The analysis performed shows that the State of São Paulo has put an effective fiscal policy into practice over the last five years, enabling it to generate a sufficient primary surplus to amortize the public debt between 2008 and 2012. The current income projection for the next few years indicates sustainable fiscal performance. Assuming the current level of investment is maintained for the next few years, the projection reveals substantial room for additional borrowing and suggests that the State of São Paulo has sufficient ability to pay to meet the financial obligations that arise while staying within the limits of the Fiscal Responsibility Law. Thus, there is room for the present loan operation and counterpart contribution, as well as the payment of financial obligations during project execution, without endangering SP's fiscal health.³⁵
- 2.12 **Economic viability.** For the economic assessment of this operation, a cost-benefit analysis was performed for each of the road projects in the representative sample (see [optional electronic link 4](#)). The evaluation used the Highway Development and Management (HDM-4) model, which is generally accepted in the sector, to compare cost and benefits, at efficiency prices, in the conditions with and without the project. The analysis yielded economic internal rates of return of between 14% and 56%; and this result proved robust to a sensitivity analysis that assumed a 25% increase in the investment cost.
- 2.13 **Implementation risks.** The program works are very conventional from the engineering standpoint and low in complexity. The DER/SP has extensive experience executing similar works, and a detailed handbook of technical and environmental control specifications that form an integral part of the bidding documents, so as to minimize construction risks. The program includes resources for contracting firms with experience in the execution and supervision of road works with similar scale and complexity.

³⁵ The state's fiscal position also allows for the continuation of the Highway Rehabilitation Program (see paragraph 1.6), which guarantees that the investment financed by the program will achieve the expected outcomes.

III. IMPLEMENTATION AND MANAGEMENT PLAN

A. Implementation arrangements

- 3.1 The borrower will be the State of São Paulo, and the Federative Republic of Brazil will guarantee the financial obligations arising from the loan contract. Program execution will be the responsibility of the State of São Paulo Highway Department (DER/SP), an agency organized and operating under public law with separate legal status, its own assets and financing, and administrative, operational, and legal autonomy. **As a special condition precedent to the first disbursement, the State of São Paulo and its Highway Department (DER/SP) will sign a legal instrument governing program execution, establishing the conditions for transfer and use of the loan proceeds, which must be previously approved by the Bank.**
- 3.2 The program will be implemented through the Highway Programs Coordination Unit (UCPR),³⁶ reporting to the DER/SP and with the necessary staffing, responsible for management and implementation of all program activities, in accordance with the provisions of the loan contract. A management firm, to be contracted with program funds, will provide technical, administrative, and financial support to the UCPR. As a special execution condition, the borrower will provide evidence that the management firm has been contracted no later than six months after contract signature.
- 3.3 **Procurement.** The procurement of works, goods and related services, and the contracting of consulting services by public and private sector entities will be conducted in accordance with Bank policies (documents GN-2349-9 and GN-2350-9). The procurement plan will be prepared for the first 18 months of the program and will be reviewed annually.
- 3.4 **Special clause.** The deadline for the physical start of works will be three years, running from the loan contract signature date.
- 3.5 **Disbursements.** The program will disburse resources under the advance of funds modality, reflecting the program's actual liquidity needs. Supervision will be on an ex post basis.
- 3.6 **Recognition of expenditures against the local counterpart.** The Bank will recognize eligible expenditures related mainly to preinvestment and works execution activities as chargeable to the local counterpart, provided that they were incurred subsequent to approval of the project profile by the Bank (14 June 2013), but in no event more than 18 months prior to approval of the loan by the Bank's Board of Executive Directors, pursuant to IDB Operational Policy OP-507 (document GN-2259-1). The maximum amount of such expenditures will be US\$20 million, equivalent to roughly 10% of the local counterpart amount. The

³⁶ The UCPR was established under Administrative Order SUP/DER-033-29/05/2012.

expenditures will be incurred in accordance with the Bank's procurement and contracting policies or substantially similar procedures.

- 3.7 **Financial statements and audits.** During program execution, the executing agency will deliver audited financial statements within 120 days after the close of each fiscal year. The closeout audit reports for the program will be delivered no later than 120 days after the last disbursement. The audit will be performed by an eligible independent audit firm.

B. Summary of monitoring and evaluation measures

- 3.8 The monitoring and evaluation plan (see [required electronic link 4](#)) will track the operation's execution against the targets and progress indicators specified in the Results Matrix ([Annex II](#)). The reports used will be the program execution plan (PEP), annual work plan (AWP), procurement plan, the six-monthly status reports, a final evaluation report that includes the program's ex post evaluation, and audited financial statements. The monitoring and evaluation plan will be coordinated by the UCPR, which will maintain effective systems for compiling periodic information on the program's physical and financial progress, with support from the management firm.

Development Effectiveness Matrix			
Summary			
I. Strategic Alignment			
1. IDB Strategic Development Objectives	Aligned		
Lending Program	Lending to support regional cooperation and integration.		
Regional Development Goals	Paved road coverage (Km/Km²).		
Bank Output Contribution (as defined in Results Framework of IDB-9)	Km of inter-urban roads build or maintained/upgraded.		
2. Country Strategy Development Objectives	Aligned		
Country Strategy Results Matrix	GN-2662-1	Expand and improve the quality and safety of federal and state road networks.	
Country Program Results Matrix	GN-2696	The intervention is not included in the 2013 Country Program Document.	
Relevance of this project to country development challenges (If not aligned to country strategy or country program)			
II. Development Outcomes - Evaluability	Highly Evaluable	Weight	Maximum Score
	8.9		10
3. Evidence-based Assessment & Solution	8.4	33.33%	10
4. Ex ante Economic Analysis	10.0	33.33%	10
5. Monitoring and Evaluation	8.3	33.33%	10
III. Risks & Mitigation Monitoring Matrix			
Overall risks rate = magnitude of risks*likelihood	Low		
Identified risks have been rated for magnitude and likelihood	Yes		
Mitigation measures have been identified for major risks	Yes		
Mitigation measures have indicators for tracking their implementation	Yes		
Environmental & social risk classification	B		
IV. IDB's Role - Additionality			
The project relies on the use of country systems (VPC/PDP criteria)	Yes	Financial Management: Budget, Accounting and Reporting, External Control, and Internal Audit.	
The project uses another country system different from the ones above for implementing the program			
The IDB's involvement promotes improvements of the intended beneficiaries and/or public sector entity in the following dimensions:			
Gender Equality			
Labor			
Environment	Yes	The program will contribute to reduce air pollution and emissions of greenhouse gases by improving roads and reducing fuel consumption in vehicles, which can maintain a more uniform speed without constant acceleration and braking.	
Additional (to project preparation) technical assistance was provided to the public sector entity prior to approval to increase the likelihood of success of the project			
The ex-post impact evaluation of the project will produce evidence to close knowledge gaps in the sector that were identified in the project document and/or in the evaluation plan	Yes	The Monitoring and Evaluation Plan is based on an ex-post cost-benefit and a before-after comparison that should help identify and quantify the impact that the project has on improving the conditions of movement of vehicles, the travel time of users and safety.	

The overall objective of the program is to improve road component of the freight and passengers multimodal transport system under the jurisdiction of the State of Sao Paulo, in order to improve competitiveness and regional and international integration. This by reducing logistics costs, particularly transport costs and travel times, as well as improve the safety of roads, through rehabilitation, construction and third ways and other priority road improvements.

The main problems of road maintenance, road safety, and operation of the road network, as well as their magnitudes are clearly identified. The program's logic is clear, which includes SMART indicators, baselines and targets for each of them. The operation has an economic analysis that includes costs and benefits related to each of the segments included in the representative sample. In the monitoring and evaluation plan, the main tools for monitoring are identified. Regarding the evaluation, a before and after methodology, and an ex-post cost-benefit analysis are considered. The plan establishes a schedule of major activities, direct responsible, and the costs associated to each of these activities.

Key program risks, mitigation measures, and indicators are identified.

RESULTS FRAMEWORK

The program's general objective is to improve the road component of the multimodal freight and passenger transportation system in the jurisdiction of the State of São Paulo (SP), in order to enhance competitiveness and regional and international integration. The purpose is to reduce logistics costs, particularly transportation costs and travel times, and to improve road safety conditions through rehabilitation, construction of third lanes, and other improvements on priority highways connecting urban and production centers with the main transportation arteries, whether road, rail, waterway, or pipeline.		
Program expected impact		
Impact indicators	Baseline	Target (2018)
Share of the rail and waterway modes in the freight transportation modal matrix in the State of São Paulo (SP). ¹	14%	17% Source: Origin-destination surveys - State of São Paulo Logistics and Transportation Department (SLT)
Average share of fiscal value added (FVA) ² of the municípios traversed by road segments participating in the program, divided by the total FVA of the state, excluding the Município of São Paulo.	3.39% (Year 2010, published in 2012; Source: State Data Analysis System Foundation (SEADE), http://www.seade.sp.gov.br)	3.78% (Year 2015, published in 2017; Source: SEADE, http://www.seade.sp.gov.br)

¹ Tons-km transported by rail or on the Paraná-Tieté waterway, as a percentage of tons-km transported on all modes of freight transportation within the State of São Paulo.

² Fiscal value added is defined as the annual value of merchandise shipped and interstate and intermunicipal transportation services provided in each município. As this indicator basically relates to transportation services, improvements in the quality of the road system as a result of program implementation should cause it to rise. The value also reflects economic activity and, consequently, the município's potential to generate public revenue (the greater is economic activity, the larger is the município's FVA and its municipal participation index (IPM) for state revenue-sharing, which is based on revenue intake from the goods and services sales tax (ICMS).

Program expected outcomes	To reduce logistics costs, particularly transportation costs and travel times, on the targeted highways.
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Outcome indicators	Vehicle operating cost (VOC) on the segments to be rehabilitated by the program (US\$/vehicle–km)					Means of verification/ Comments
	Baseline (2013)		Target (2018)			
Segment 1. SP-062 – Caçapava – Taubaté						Highway Development and Management (HDM-4) model State of São Paulo Highway Department (DER/SP) – Highway Programs Coordination Unit (UCPR)
	Cars	US\$0.209	Cars	US\$0.191	8.61%	
	Buses and trucks	US\$2.887	Buses and trucks	US\$2.449	15.17%	
	Fleet average	US\$1.548	Fleet average	US\$1.320	14.73%	
Segment 2. SP-062 – Pindamonhongaba – Roseira – Aparecida	Cars	US\$0.209	Cars	US\$0.185	11.48%	HDM-4 DER/SP – UCPR
	Buses and trucks	US\$2.864	Buses and trucks	US\$2.358	17.67%	
	Fleet average	US\$1.537	Fleet average	US\$1.272	17.24%	
Segment 3. SP-062 – Guaratinguetá – Lorena	Cars	US\$0.208	Cars	US\$0.185	11.06%	HDM-4 DER/SP – UCPR
	Buses and trucks	US\$2.880	Buses and trucks	US\$2.380	17.36%	
	Fleet average	US\$1.544	Fleet average	US\$1.283	16.90%	

Outcome indicators	Vehicle operating cost (VOC) on the segments to be rehabilitated by the program (US\$/vehicle-km)					Means of verification/ Comments
	Baseline (2013)		Target (2018)			
Segment 4. SP-245 – Avaré – Arandú – Cerqueira Cesar	Cars	US\$0.209	Cars	US\$0.185	11.48%	HDM-4 DER/SP – UCPR
	Buses and trucks	US\$2.882	Buses and trucks	US\$2.384	17.28%	
	Fleet average	US\$1.546	Fleet average	US\$1.285	16.88%	
Segment 5. SP-310 – Pereira Barreto – Ilha Solteira	Cars	US\$0.210	Cars	US\$0.185	11.90%	HDM-4 DER/SP – UCPR
	Buses and trucks	US\$2.882	Buses and trucks	US\$2.365	17.94%	
	Fleet average	US\$1.546	Fleet average	US\$1.275	17.53%	

Outcome indicators	Vehicle operating cost (VOC) on the segments to be rehabilitated by the program (US\$/vehicle-km)						Means of verification/ Comments
	Baseline (2013)			Target (2018)			
Segment 6. SP-461 – Monções – Nhandeara	Cars	US\$0.247		Cars	US\$0.236	4.45%	HDM-4 DER/SP – UCPR
	Buses and trucks	US\$3.274		Buses and trucks	US\$3.180	2.87%	
	Fleet average	US\$1.761		Fleet average	US\$1.708	3.01%	

Outcome indicators	Travel time cost on the segments to be rehabilitated by the program (US\$)						Means of verification/ Comments
	Baseline (2013)			Target (2018)			
Segment 1. SP-062 – Caçapava – Taubaté	Cars	US\$0.063		Cars	US\$0.061	3.17%	HDM-4 DER/SP – UCPR
	Buses and trucks	US\$0.349		Buses and trucks	US\$0.329	5.73%	
	Fleet average	US\$0.206		Fleet average	US\$0.195	5.34%	
Segment 2. SP-062 – Pindamonhongaba – Roseira – Aparecida	Cars	US\$0.050		Cars	US\$0.045	10.00%	HDM-4 DER/SP – UCPR
	Buses and trucks	US\$0.290		Buses and trucks	US\$0.243	16.21%	
	Fleet average	US\$0.170		Fleet average	US\$0.144	15.29%	
Segment 3. SP-062 – Guaratinguetá – Lorena	Cars	US\$0.056		Cars	US\$0.051	8.93%	HDM-4 DER/SP – UCPR
	Buses and trucks	US\$0.319		Buses and trucks	US\$0.272	14.73%	
	Fleet average	US\$0.188		Fleet average	US\$0.162	13.83%	
Segment 4. SP-245 – Avaré – Arandú – Cerqueira Cesar	Cars	US\$0.052		Cars	US\$0.048	7.69%	HDM-4 DER/SP – UCPR
	Buses and trucks	US\$0.301		Buses and trucks	US\$0.256	14.95%	
	Fleet average	US\$0.177		Fleet average	US\$0.152	14.12%	

Outcome indicators	Travel time cost on the segments to be rehabilitated by the program (US\$)					Means of verification / Comments	
	Baseline (2013)		Target (2018)				
Segment 5. SP-310 – Pereira Barreto – Ilha Solteira	Cars	US\$0.049		Cars	US\$0.044	10.20%	HDM-4 DER/SP – UCPR
	Buses and trucks	US\$0.288		Buses and trucks	US\$0.240	16.67%	
	Fleet average	US\$0.169		Fleet average	US\$0.142	15.98%	
Segment 6. SP-461 – Monções – Nhandeara	Cars	US\$0.111		Cars	US\$0.089	19.82%	HDM-4 DER/SP – UCPR
	Buses and trucks	US\$0.579		Buses and trucks	US\$0.498	13.99%	
	Fleet average	US\$0.345		Fleet average	US\$0.290	14.78%	

Outcome indicators	Quality of the interventions (US\$)					Means of verification/ Comments
	Baseline (2013)				Target (2018)	
International roughness index (IRI) ³	Functional status measured by IRI value – representative sample				100% of highways in very good conditions (IRI less than 2) measured at the time of provisional acceptance. 100% of targeted highways in good condition (IRI less than 3.5) measured at the time of final acceptance, or no more than two years later.	Provisional and final acceptance reports for works
	Rating	Description	IRI (m/km)	%		
	A	Very good	< 2.0	18.8		
	B	Good	2.0 - 3.5	35.4		
	C	Fair	3.5 - 5.0	19.7		
	D	Poor	5.0 - 6.5	10.7		
	E	Very poor	> 6.5	15.4		

³ The target for this indicator is defined as the maximum roughness value that the road surface can have over the entire targeted segment. It is measured at two points in time: when the work is delivered to the government by the contractor (provisional acceptance), and when the contractor ceases to be responsible for maintaining the road segment (final acceptance). The benchmark baseline for this indicator is the current IRI indicator for roads in the representative sample, expressed as a percentage of km of these highways where the IRI is within a certain range.

Program expected outcomes	Improved safety conditions on the targeted highways
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Outcome indicators	Number of road accidents fatalities on segments in the representative sample		Means of verification/ Comments
	Baseline (2013)	Target (2018)	
Reduction of economic cost of fatal accidents (US\$)	Economic cost	Economic cost	DER/SP – UCPR Source: DER/SP Operations Coordination Unit; Brazilian Institute of Geography and Statistics (IBGE)
	US\$3,430,088	US\$2,476,658	

Program expected outputs

Component 1. Engineering and administration	(i) Studies and designs; (ii) project administration.							
Output indicators	Baseline (2013)	2014	2015	2016	2017	2018	Cumulative target	Means of verification/ Comments
Number of socioenvironmental and economic studies performed	0	6	6	4	-	-	16	Provisional acceptance order for consulting services
Number of engineering designs prepared	0	6	6	4	-	-	16	Provisional acceptance order for consulting services
Number of financial audit reports with the Bank's no objection	0	1	1	1	1	1	5	Contractual clause fulfilled (DER/SP – UCPR)
Number of project evaluation reports approved	1	-	-	-	-	1	2	Midterm and final evaluation reports approved (DER/SP – UCPR / IDB)

Program expected outputs								
Component 2. Civil works and supervision	(i) Rehabilitation works; (ii) technical supervision; (iii) expropriation and environmental compensation							
Output indicators	Baseline (2013)	2014	2015	2016	2017	2018	Cumulative target	Means of verification/ Comments
BR-L1373								
Km of the state road network rehabilitated by the project	0	70	145	141	153	55	564	Provisional acceptance certificate for works and the respective environmental audit reports (DER/SP – UCPR)
Number of road safety audits performed (by DER staff and contracted experts)	0	6	6	4	-	-	16	Road safety report delivered to the party responsible for engineering designs, for incorporation of recommendations
Number of works technical supervision contracts formalized	0	1	2	2	2	1	8	Contract signed and service order issued (DER/SP – UCPR)

Program expected outputs								
Component 3: Institution-strengthening								
Output indicators	Baseline (2013)	2014	2015	2016	2017	2018	Cumulative target	Means of verification/ Comments
BR-L1373								
Number of systems for planning and prioritization of investments in the state road network (including design of the information system, data collection, purchase of computer hardware, and training of professional staff)	0	-	1	-	-	-	1	Contract signed and service order issued (DER/SP – UCPR)
Number of staff trained in the internal audit area	0	10	-	-	-	-	10	Report of the firm responsible for training, approved by the DER/SP

FIDUCIARY AGREEMENTS AND REQUIREMENTS

Country: Brazil
Project number: BR-L1373
Project name: State of São Paulo Highway Investment Program
Prepared by: Carlos Lago Bouza, Fiduciary Specialist (FMP/CBR), and Santiago Schneider, Fiduciary Specialist (FMP/CBR)

I. EXECUTIVE SUMMARY

- 1.1 The institutional evaluation for project fiduciary management was based on: (i) the fiduciary context of the country; (ii) the results of the fiduciary risk assessment; (iii) the institutional capacity of the State of São Paulo Highway Department (DER/SP); (iv) working meetings with the project team; and (v) the experience of the DER/SP in implementing projects with the Bank since 2001. As a result, fiduciary agreements for program execution have been prepared for both procurement and financial management.

II. FIDUCIARY CONTEXT OF THE COUNTRY

- 2.1 Brazil has a sound, transparent regulatory and institutional framework with robust country fiduciary systems, enabling effective management of administrative, financial, internal control, and procurement processes in compliance with the principles of transparency, economy, and efficiency. These systems require ongoing improvement and strengthening, in order to adapt them to new fiduciary requirements. The Bank's fiduciary strategy with Brazil is therefore oriented toward progressive and sustainable use of the country's fiduciary systems.
- 2.2 Public agencies in the State of São Paulo (SP) are mandated to use the computerized Integrated Financial Management System for States and Municípios (SIAFEM/SP) to support their financial management activities (budget, accounting, financial management, and asset management). Agencies supplement it with the SIGEO budgetary execution management system, which is a statewide information technology system to produce management reports for internal use and for oversight bodies.
- 2.3 Public sector entities use and adhere to the following country management support tools for the planning and organization of program activities: (i) the Multiyear Plan (PPA), which establishes directives and sets objectives and targets for public administration; (ii) the annual Budgetary Procedures Law (LDO), which sets the government's budgetary targets; (iii) the Annual Budget Law (LOA), which projects and establishes the public administration's expenditures

- for the current year; (iv) the Fiscal Responsibility Law, which sets limits on the public administration's spending; and (v) management support information systems (planning, accounting, and financial management).
- 2.4 Procurement and contracting are governed by the National Competitive Bidding Law (Law 8666/93). The State of São Paulo has an electronic system for procurement of off-the-shelf goods and services, Bolsa Eletrônica de Compras (BEC), which has been evaluated and accepted by the Bank.
- 2.5 Entities are supervised by the State of São Paulo Audit Office (TCE/SP) and the Audit Office of the Union (TCU), with control audits performed annually. These audit offices continually track the agencies' financial transactions and processes through daily monitoring of the SIAFEM/SP. Internal control audits are also conducted by the State Finance Department.

III. FIDUCIARY CONTEXT OF THE EXECUTING AGENCY

- 3.1 The Bank has experience working in the transportation sector on operations with the state and the DER/SP, which has served as executing agency for phases I, II, and III now in execution. The IDB has been supporting the State of São Paulo (SP) through three programs: (i) loan 1351/OC-BR: (BR-0295), Highway Rehabilitation Program in the State of São Paulo, Stage I (US\$120 million), 2001, concluded in July 2006; (ii) loan 1735/OC-BR: (BR-L1033), Highway Rehabilitation Program in the State of São Paulo, Stage II (US\$30 million), concluded in December 2010; and (iii) loan 2077/OC-BR: (BR-L1161), Highway Rehabilitation Program in the State of São Paulo, Stage III (US\$194 million), now in execution.
- 3.2 The DER/SP is an independent agency with technical, administrative, and financial autonomy, headquartered in the city of São Paulo with jurisdiction over the entire state. It is responsible for the administration and maintenance of much of the state road system, and is tasked principally with planning; preparing resource forecasts for the execution of works and services; projecting, building, maintaining, and operating the highways in the road system under its jurisdiction; as well as overseeing the highway patrol and authorizing, concessioning, and inspecting freight transport weight control on the state road system under DER/SP jurisdiction. It also approves the municipal road plans.
- 3.3 No fiduciary problems are foreseen, given the executing agency's satisfactory experience in similar programs. The DER/SP is a good executing agency, as demonstrated in its execution of the aforementioned projects, and also in view of the condition and length of the road network under its jurisdiction and its long experience in contracting works with the private sector. The DER/SP has an effective organizational structure and will be supported by a program management unit (PMU), reporting to the Office of the Superintendent of the DER/SP and with the necessary technical staff, responsible for management and implementation of all program activities. A management firm will provide

technical, administrative, and financial support to the PMU. Since the same arrangement will be used for the new operation, no problems are foreseen in this regard.

IV. FIDUCIARY RISK ASSESSMENT AND MITIGATION MEASURES

- 4.1 Based on the executing agency's experience with the Bank, together with the risk assessment exercises (PRM workshop) and an updated institutional capacity analysis using the Institutional Capacity Assessment System (ICAS), the executing agency was found to have good fiduciary capacity to undertake the programmed activities, and a low level of risk.

V. CONSIDERATIONS FOR THE SPECIAL PROVISIONS OF THE CONTRACT

- 5.1 Considerations for the special fiduciary conditions are as follows:
- a. As a special condition precedent to the first disbursement, the State of São Paulo and the DER/SP will sign a subsidiary execution agreement, establishing the conditions for transfer and use of the loan proceeds, which must be previously approved by the Bank.
 - b. As special execution conditions: (i) the borrower will provide evidence that the management firm has been contracted no later than six months after contract signature; and (ii) prior to the start of each work, the borrower will provide evidence that: (a) the segment to be worked on by the contractor has the corresponding setup permit (LI) or waiver, and any other applicable permits; and (b) a specific resettlement plan has been developed in accordance with Operational Policy OP-710 for works that so require.

VI. AGREEMENTS AND REQUIREMENTS FOR PROCUREMENT EXECUTION

- 6.1 The fiduciary agreements and requirements for procurement establish the provisions applicable for the execution of all procurements planned under the project.
- A. Procurement execution**
- 6.2 Procurement processes will be conducted through the PMU, assisted by a management firm. Works, goods, and nonconsulting services will be procured using the "Policies for the procurement of works and goods financed by the Inter-American Development Bank" (document GN-2349-9), and consultants will be selected and contracted using the "Policies for the selection and contracting of consultants financed by the Inter-American Development Bank" (document GN-2350-9), both of March 2011. Procurement processes will be reviewed by the Bank as indicated in the [Procurement Plan](#).

- 6.3 **Procurement of works, goods, and nonconsulting services.** Contracts for works, goods, and nonconsulting services generated under the project and subject to international competitive bidding (ICB) will be executed using the standard bidding documents (SBDs) issued by the Bank. Procurements subject to national competitive bidding (NCB) will be implemented using country bidding documents agreed upon with the Bank (or satisfactory to the Bank, if not yet agreed upon). For procurements of technical goods or services, the Bank has accepted the state's BEC reverse auction system for use up to the ICB threshold. The project sector specialist will be responsible for reviewing the technical specifications for procurements during the preparation of procurement processes.
- 6.4 **Selection and contracting of consulting services.** Consulting service contracts generated under the project will be executed using the standard request for proposals (SRPs) issued by the Bank. The project sector specialist will be responsible for reviewing the terms of reference for the contracting of consulting services.
- 6.5 **Selection of individual consultants.** Individual consultants will be selected on the basis of their qualifications to do the work, based on comparison of at least three candidates. When the situation so requires, notices may be published in the local or international press, to invite qualified consultants to submit résumés.
- 6.6 **Direct contracting.** No direct contracting is envisaged.
- 6.7 **Retroactive financing.** Not applicable.
- 6.8 **Recognition of expenditures.** The Bank will recognize eligible expenditures related mainly to preinvestment and works execution activities as chargeable to the local counterpart, provided that they were incurred subsequent to approval of the project profile by the Bank (14 June 2013), but in no event more than 18 months prior to approval of the loan by the Bank's Board of Executive Directors, pursuant to IDB Operational Policy OP-507 (document GN-2259-1). The maximum amount of such expenditures will be US\$20 million, equivalent to roughly 10% of the local counterpart amount. The expenditures will be incurred in accordance with the Bank's procurement and contracting policies or substantially similar procedures.
- B. Thresholds for procurement processes**
- 6.9 The threshold for the use of ICB will be made available to the borrower or executing agency, as applicable, online at www.iadb.org/procurement. Below this threshold, the selection method will be determined according to the complexity and characteristics of the procurement, which must be reflected in the procurement plan approved by the Bank.
- C. Initial procurement plan**
- 6.10 The version of the initial procurement plan agreed upon during the analysis mission is available at the following link ([Procurement Plan](#)).

D. Procurement supervision

- 6.11 All ICB and direct contracting will be subject to ex ante review; given the special features of the project and the operational capabilities of the PMU, an annual post review will be performed. The Bank may alter the review modality indicated in the procurement plan on the basis of the annual audit reviews.
- 6.12 **Special provisions.** The executing agency will update the procurement plan annually, or as requested by the Bank, to reflect the program's actual execution needs and the progress achieved.
- 6.13 **Records and files.** The program's records and files will be kept at the offices of the Finance Department and under the appropriate security conditions.

VII. FINANCIAL MANAGEMENT AGREEMENTS AND REQUIREMENTS

A. Programming and budget

- 7.1 The DER/SP uses planning instruments such as the Multiyear Plan (PPA) and the Annual Budget Law (LOA). The budget for program activities forms part of the LOA and is approved by the Legislative Assembly (Law Dec/12).
- 7.2 For program execution, budgetary resources must be recorded in the year of execution in the SIAFEM/SP as an external source. The 2014 Budget Law must include the funds necessary for execution, including both the external loan and the local counterpart contribution. The DER/SP will include the financing of this operation in the budgetary proposal for 2014, which will be sent to the Legislative Assembly in October for passage in December 2013.

B. Accounting and information system

- 7.3 All DER/SP accounting, including the program, will be recorded in the SIAFEM/SP. The SIAFEM/SP system allows accounting information to be retrieved for different environments, but does not currently permit identification of program transactions with the characteristics required by the Bank (by source of financing and investment category).
- 7.4 Accordingly, an interface has been designed at the DER for the management of programs with external sources that makes it possible to extract data directly from the SIAFEM system. This will be used to present the program's financial statements to the Bank and to the external auditors.

C. Disbursements and cash flow

- 7.5 The program will use the State of São Paulo's cash management system. Expenditures will be subject to the financial and budgetary execution process and must be properly recorded in SIAFEM/SP system.
- 7.6 The program will operate with funds advanced by the Bank to meet the project's actual liquidity needs, based on a 180-day expenditure forecast. Disbursement

- requests must be submitted to obtain an advance of funds, supported by actual financial planning (cash flow) reflecting resource needs over a period of 180 days.
- 7.7 The PMU will submit an initial financial plan for the project to the Bank, which must include a disbursement timetable for the entire execution period. A breakdown must be extracted from this initial plan, reflecting the first year of execution, which will be used to plan the first advance of funds. For future advances, it will be necessary to account for at least 80% of the previously advanced funds.
- 7.8 The supporting documentation for expenditures will be subject to ex post review during annual audits, or as required by the Bank. Ex post review will be fully documented in a report structured according to the Bank's auditing requirements.
- 7.9 Expenditures deemed ineligible by the Bank must be repaid from local contribution resources or other resources, as the Bank sees fit, depending on the nature of the ineligibility.

D. Internal control and internal audit

- 7.10 The environment and procedures for internal control, communication, information and monitoring of the executing agency's activities must comply with the country's laws and regulations. Internal control of the DER/SP is conducted by the State of São Paulo Finance Department, which is the internal audit unit responsible for auditing all units of the State of São Paulo Logistics and Transportation Department (SLT). The Finance Department makes annual site visits to review processes and analyze samples. These auditors also have access to the SIAFEM/SP system, through which they track the financial activities of the state departments on an ongoing basis, requesting information from the department constantly.
- 7.11 The internal structure of the DER/SP also includes an internal audit unit known as "Audit Services," which reviews and monitors internal control procedures on an ongoing basis to ensure compliance with regulations. This unit will be strengthened with resources from this operation.

E. External control and reports

- 7.12 Control of public entities is exercised by the TCE/SP and TCU, which performs annual external audits, according to the annual external audit plans. These audit offices continually track the agencies' financial transactions and processes through daily monitoring of the SIAFEM/SP.
- 7.13 The TCE/SP is not currently eligible under Bank rules to audit the financial statements of projects financed with IDB resources. The DER/SP must therefore engage an external audit firm acceptable to the Bank and deliver the audited financial statements as required under document OP-273-2, "Financial management policy for IDB-financed projects," within 120 days after the close of the financial year. The content of the reports and opinions to be issued must comply with the terms of reference prepared by the executing agency and

accepted by the Bank, following the international standards on auditing in force and other policies and procedures observed by the Bank. Audit services will be financed with the loan proceeds.

F. Financial supervision plan

- 7.14 The supervision plan is oriented toward a low-risk operation. This plan may be altered during project execution, according to observed risk circumstances or to satisfy additional control needs determined by the Bank.

SUPERVISION PLAN				
Supervision activity	Nature - Scope	Frequency	Responsible entity	
			Bank	Executing agency
Procurement	Review of procurement processes for works and consulting services	As indicated in the procurement plan	Sector and procurement specialist	PMU
	Review of processes above the thresholds for ICB and direct contracting	Throughout execution period	Sector and procurement specialist	PMU
	Supervision visit	Annual	Sector specialist and fiduciary team	
Financial	Ex post review of disbursements and procurements	Annual	Fiduciary team	PMU – external auditors
	Annual audit	Annual	Fiduciary team	External auditors
	Review of disbursement requests	Periodic	Fiduciary team	
	Supervision visit	Annual	Sector specialist and fiduciary team	

G. Execution mechanism

- 7.15 The organizational arrangements for project execution will be the same as used in the previous program. Program execution will be the responsibility of the State of São Paulo Highway Department (DER/SP), an agency organized and operating under public law with separate legal status, its own assets and financing, and administrative, operational, and legal autonomy, reporting to the State of São Paulo Logistics and Transportation Department (SLT). The program will be implemented through the program management unit (PMU), reporting to the Office of the Superintendent of the DER/SP, which is currently operating with the

- necessary staff, and will be responsible for management and implementation of all program activities, in accordance with the provisions of the loan contract. A condition precedent to the first disbursement will be the Bank's no objection to the subsidiary execution agreement signed between the State of São Paulo and the DER/SP, establishing the conditions for transfer and use of the loan proceeds.
- 7.16 A management firm, to be contracted with program funds, will provide technical, administrative, and financial support to the PMU. As a special execution condition, the borrower will provide evidence that the management firm has been contracted no later than six months after contract signature.

DOCUMENT OF THE INTER-AMERICAN DEVELOPMENT BANK

PROPOSED RESOLUTION DE-___/___

Brazil. Loan ___/OC-BR to the State of São Paulo
State of São Paulo Highway Investment Program

The Board of Executive Directors

RESOLVES:

That the President of the Bank, or such representative as he shall designate, is authorized, in the name and on behalf of the Bank, to enter into such contract or contracts as may be necessary with the State of São Paulo, as Borrower, and with the Federative Republic of Brazil, as Guarantor, for the purpose of granting the former a financing to cooperate in the execution of the State of São Paulo Highway Investment Program. Such financing will be for an amount of up to US\$480,135,000 from the Ordinary Capital resources of the Bank, and will be subject to the Financial Terms and Conditions and the Special Contractual Conditions of the Project Summary of the Loan Proposal.

(Adopted on ____ 20__)

LEG/SGO/CSC/IDBDOCS: 38021225
Pipeline No. BR-L1373